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| 10/535,555 | 05/18/2005 | Charles Razzell | US02 0453 US | 7474 |

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| EXAMINER | |
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| CHOW, CHARLES CHIANG | |
| ART UNIT | PAPER NUMBER |
| 2618 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/535,555 | RAZZELL, CHARLES | |
| | Examiner | Art Unit | |
| | Charles Chow | 2618 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *18 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## Detailed Action

## Specification

1. The disclosure is objected to because of the following informalities: The specification does not contain the section headings. Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

**Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

## Abstract

2. The abstract of the disclosure is objected to because the abstract is not provided on a separate sheet. Correction is required. See MPEP§ 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.
The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc. implied language.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Takatz et al. (US 7,046,749 B2).

**For claim** 1, Takatz et al. [ Takatz] teaches a method of operating a radio receiver [ Fig.1, Fig. 5A to Fig. 5C & the description in specification, claims 1, 6-7, for operating a radio with AGC loop ] having an analog portion coupled to an A/D converter [ VGA1 to VGA 3, Fig. 5a, coupled to ADC 14], and

the A/D converter coupled to a digital signal processing portion [digital down & filter 15, digital scaler 24 ], comprising

preventing the total signal power reaching the A/D converter from exceeding a maximum allowable input amplitude [ the AGC loop coupled to VGA 12, Fig. 5A, for limiting the signal clipping by ADC 14, col. 3, line 65 to col. 4, line 8 & col. 4, lines 41-48].

## Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatz in view of Shi (US 2005/0079,842 A1).

**For claim** 2, Takatz fails to teaches the method [Fig. 1, Fig. 5A to Fig. 5C & its description, for operating a radio with AGC loop], wherein preventing the total signal power reaching the A/D converter from exceeding a maximum allowable input amplitude [ preventing signal clipping by ADC 14, col. 3, line 65 to col. 4, line 8 & col. 4, lines 41-48].

Takatz teaches the detecting of wide band signal power variance 22, but fails to teach the detecting wide-band signal power associated with a first threshold.

Shi teaches the comprises detecting a wide-band signal power [ the wide band signal power Rssi _A at 218, paragraph 0043, & narrow band signal power Rssi_B at 220 ] greater than a predetermined first threshold [ threshold _A, step 602, reducing gain at 604, Fig. 6], and, responsive thereto, reducing the gain of at least one amplifier coupled to an input terminal of the A/D converter [ to reduce the gain of LNA 210, paragraph 0044, for Σ-Δ ADC 217], to avoid the intermodulation interference. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz with Shi's detecting of wide band signal power, such that the receiver could avoid the intermodulation interference.

**For claim** 3, Takatz teaches the method [Fig. 1, Fig. 5A-5C, specification, claims 1, 6-7], but fails to teach the sigma-delta A/D.

Shi teaches the wherein the A/D converter is a sigma-delta A/D converter [Σ-Δ ADC 217], using the same reasoning in claim 2 above to combine Shi to Takatz.

**For claim** 4, Takatz teaches the method [Fig. 1, Fig. 5A-5C, specification, claims 1, 6-7], but fails to teach the greater than a predetermined second threshold.

Shi teaches comprising detecting an in-band signal power greater than a predetermined second threshold, and, responsive thereto [ the step 610, narrow band signal power Rssi_B, threshold_C in step 612 & reducing LNA gain in 614, steps 612, 614, 616, Fig. 6], reducing the gain of at least one amplifier coupled to an input terminal of the A/D converter [ to reduce the gain of LNA 210, paragraph 0044, for Σ-Δ ADC 217], using the same reasoning in claim 2 above to combine Shi to Takatz.

**For claim** 5, Takatz teaches the method [Fig. 1, Fig. 5A-5C, specification, claims 1, 6-7], wherein the radio receiver includes a first variable gain amplifier [VGA1, Fig. 5A], but fails to teach the wide-band signal power is greater than a first threshold.

Shi teaches the method further comprises placing the first variable gain amplifier [ LNA 210] in a low gain state [ reducing the gain in step 604] if a wide-band signal power is greater than a first threshold [ step 602, the wide band Rssi_A is greater than threshold_A], using the same reasoning in claim 2 above to combine Shi to Takatz.

**For claim** 6, Takatz teaches the method [Fig. 1, Fig. 5A-5C, specification, claims 1, 6-7], wherein the radio receiver includes a first variable gain amplifier [VGA1, Fig. 5A], but fails to teach the wide-band signal power is less than a first threshold, together with the narrow band signal power is greater than a second threshold.

Shi teaches the wherein the radio receiver [200] includes a first variable gain amplifier [LNA 210], and the method further comprises

determining that a wide-band signal power is less than a first threshold [ step 602, wide power Rssi_A is less than thres_A, then, go to step 608]; and placing the first variable gain amplifier in a low gain state if a narrow-band signal power is greater than a second threshold [ reducing the gain of LNA at 616 after narrow power Rssi_B is greater than thres_C at 614], using the same reasoning in claim 2 above to combine Shi to Takatz.

5. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatz in view of Shi, as applied to claim 6 above, and further in view of Walker et al. (US 2005/0208,919 A1).

**For claim** 7, Takatz teaches the method [Fig. 1, Fig. 5A-5C, specification, claims 1, 6-7], wherein the radio receiver includes a first variable gain amplifier [VGA1, Fig. 5A].
Shi teaches the wherein the first variable gain amplifier is placed in a low gain state if the narrow-band power is greater than the second threshold [ the narrow Rssi_B is greater than thres_C at step 612, then, to reduce the gain of LNA, step 616].

Takatz, Shi fail to teach the hysteresis value for the threshold.

Walker teaches the hysteresis value for the threshold [ the hysteresis for the gain stepping in Fig. 4C, for the gain rising & gain falling, low gain in table 1, paragraph 0078-0080], for reliable controlling the gain changes with hysteresis. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz, Shi with Walker's hysteresis, in order to reliably controlling the gain changes with hysteresis.

**For claim** 8, Takatz teaches the method [Fig. 1, Fig. 5A-5C, specification, claims 1, 6-7], the first variable gain amplifier [VGA1, Fig. 5A].

Shi teaches the wherein the first variable gain amplifier [LNA] is placed in a high gain state [step 706] if the narrow-band power is less than the second threshold [ the narrow Rssi_B is less than thres_C at step 612, then, to step 702, to increase the gain of LNA at step 706].

Takatz, Shi fail to teach the hysteresis value for the threshold.

Walker teaches the hysteresis value for the threshold [ the hysteresis for the gain stepping in Fig. 4C, for the gain rising & gain falling, low gain in table 1, paragraph 0078-0080], using the same reasoning in claim 8 above to combine Walder to Takatz & Shi.

**For claim** 9, Takatz, Shi teaches the method as in claim 8, but fail to teach the same hysteresis value.

Walker teaches the wherein the first hysteresis value and the second hysteresis value are the same [ the same hysteresis value, from L1-Fall going towards L1-Rise or from L1-Rise going towards L1-Fall, in Fig. 4C for raising the gain or reducing the gain], using the same reasoning in claim 8 above to combine Walder to Takatz & Shi.

6. Claims 10-11, 15-17, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatz in view of Shi-'842 A1.

**For claim** 10, Takatz teaches a method of preventing saturation of a sigma-delta A/D converter in a radio receiver [ Fig. 1, Fig. 5A-5C & the description in specification, claims 1, 6-7; the AGC loop coupled to VGA 12 for limiting the signal clipping by ADC 14, col. 3, line 65 to col. 4, line 8 & col. 4, lines 41-48]

having digital channel selectivity circuitry [ digital filter 17-I, 17-Q, Fig. 1].

Takatz teaches the estimating of wide band power variance 22 & narrow band power variance 21, but fails to teach the wide band power estimation and narrow band power estimation.

Shi teaches the comprising obtaining a wide-band power estimation [ 218, paragraph 0043] and a narrow-band power estimation [ 220, oo43]; reducing an amplifier gain [ step 604] of a first one of a plurality of amplifiers [ first amplifier LNA 210] if the wide-band power estimation [ wide power Rssi_A ] is greater than a first predetermined value [ if wide power Rssi_A is greater than thres_A at step 602]; and

if the wide-band power estimation is not greater than the first predetermined value, reducing the gain of at least one of the plurality of amplifiers if the narrow-band power estimation is greater than a second predetermined value.

Shi teaches the wide-band signal power estimation [218, paragraph 0043] is not greater than a first predetermined value [ step 602, wide power Rssi_A is less than thres_A, then, go to step 608], reducing the gain of at least one of the plurality of amplifiers
if a narrow-band power is greater than a second predetermined value [ reducing the gain of LNA at 616 after narrow power Rssi_B is greater than thres_C at 614], to avoid the intermodulation interference [paragraph 0044]. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz with Shi's detecting of wide band signal power, such that the receiver could avoid the intermodulation interference.

**For claim** 11, Takatz teaches the method [Fig, 1, Fig. 5A-5C, its description & claims 1, 6-7], wherein the first predetermined value is selected [ the in this instance, selecting a -3 dBm threshold, col. 4, lines 55-63] so as to reduce the occurrence of ADC saturation due to

out-of-band signal power [ to limit the signal clipping at ADC 14, col. 3, line 65 to col. 4, line 8].

**For claim** 15, Takaza teaches a radio receiver [Fig. 1, Fig. 5A-5C], comprising an analog-to-digital converter [ADC 14, Fig. 5A] connected to one of the plurality of variable gain amplifiers [VGA1 to VGA3];

a digital baseband processor [15, 24, 21-23, Fig. 1] including selectivity circuitry [digital filters 17-I, 17-Q], and automatic gain control circuitry [18 in Fig. 5A to Fig. 5C].

Takatz teaches the AGC 18 received estimated narrow band & wide band power variance, but fails to teach the analog down converter, AGC circuitry to receive wide band signal power estimate and a narrow-band signal power estimate.

Shi teaches an analog down converter [212; Fig. 2], the automatic gain control circuitry [ 222] configured to receive a wide-band signal power estimate [ estimating wide power Rssi_A at 218, paragraph 0043], and a narrow-band signal power estimate [estimating narrow power Rssi_B at 220], to avoid the intermodulation interference [paragraph 0044]. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz with Shi's detecting of wide/narrow band signal power, such that the receiver could avoid the intermodulation interference..

**For claim** 16, Takatz teaches the radio receiver [Fig. 1, Fig. 5a-5C], wherein the plurality of variable gain amplifiers are coupled to the automatic gain control circuitry [ VGA1 to VGA 3, Fig. 5A, coupled to the AGC loop via D/A 214].

**For claim** 17, Takatz teaches the radio receiver [Fig. 1, Fig. 5a-5C], but fails to teach the wherein the analog-to-digital converter is a sigma-delta analog-to-digital converter.

Shi teaches the analog-to-digital converter is a sigma-delta analog-to-digital converter

[ Σ-Δ ADC 217, Fig. 2], using the same reasoning in claim 2 above to combine Shi to Takatz.

**For claim** 20, Takatz teaches the radio receiver [Fig. 1, Fig. 5A-5C], wherein the selectivity circuitry comprises digital filters [ digital filter 17-I, 17Q].

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takatz in view of Shi, as applied to claim 15 above, and further in view of Ciccarelli et al. (US 6,498,926 B1).

**For claim** 18, Takatz teaches the radio receiver [Fig. 1, Fig. 5a-5C], but fails to teach the receiving a wide-band, narrow-band, threshod value.

Shi teaches the wherein the automatic gain control circuitry 222 for comparing wide band threshod, thrs_A at step 602 & narrow band threshold, thrs_C at step 612, but fails tot each the configured to receive threshold value.

Ciccarelli et al. [Ciccarelli] teaches the adjusting the rssi threshold based on the BER, FER performance [col. 12, lines 39-54], in order to maintaining the signal quality. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz, Shi with Ciccarelli's adjustable rssi threshold, in order to maintaining the signal quality.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takatz in view of Shi-'842 A1 and Walker-'919 A1.

**For claim** 12, Takatz teaches a method of operating a radio receiver [Fig. 1, Fig. 5A-5C & its description in specification, claims 1, 6-7] having a plurality of serially coupled variable gain amplifiers [VGA1 to VGA3, Fig. 5A], and a digital portion [ 15] that performs, at least

partially, a frequency selectivity function [ digital filter 17-I, 17-Q, Fig. 1, 160-I/160q in Fig, 5B & its description in specification], but fails to teach the steps a) to g).

Shi teaches a radio receiver an analog down-conversion portion [ Fig. 2, analog mixer 212], including the method comprising

a) setting each of the plurality of the variable gain amplifiers to a high gain state [ setting the LNA to maximum gain in paragraph 0015, for the plurality of amplifiers in 12 of Takatz ] ;

b) obtaining a wide-band signal power estimate; c) obtaining a narrow-band signal power estimate [ estimating wide, narrow, band power at 218, 222, paragraph 0043];

d) determining if the wide-band signal power estimate is greater than the value of a wide-band threshold; e) setting a first one of the plurality of variable gain amplifiers to a low gain state if the determination in (d) is affirmative [reducing the gain in step 604, if the wide band Rssi_A is greater than threshold_A at step 602, Fig. 6],

f) if the determination in (d) is negative [ N from step 602], determining if the narrow-band signal power estimate is greater than the value of a narrow-band threshold [ narrow band pewer Rssi_B is compared with threshold thres_C at 612]; and

g) setting the first one of the plurality of variable gain amplifiers to a low gain state if the narrow-band signal power estimate is greater than the first narrow-band threshold value [ reducing the gain of LNA at step 616 if narrow power Rssi_B is greater than thres_C at step 612], ], to avoid the intermodulation interference [paragraph 0044]. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz with Shi's detecting of wide band signal power, such that the receiver could avoid the intermodulation interference.

Takatz & Shi fail to teach the hysteresis.

Walker teaches the hysteresis value for the threshold [ the hysteresis for the gain stepping in Fig. 4C, for the gain rising & gain falling, low gain in table 1, paragraph 0078-0080], for reliable controlling the gain changes with hysteresis. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz, Shi with Walker's hysteresis, in order to reliably controlling the gain changes with hysteresis.

9. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatz in view of Shi, Walker, and further in view of Husted et al. (US 2003/0012,313 A1).

**For claim** 13, Takatz teaches the method together with Shi & Walker in claim 12 above, although Shi teaches the wide band threshold, thres_A at step 602, but fail to teach the further comprising dynamically assigning a value to the threshold.

Husted et al. [Husted] teaches the dynamically assigning a value to the threshold [ the saturation threshold can be down loaded in paragraph 0041], in order to adjust the threshold values. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz, Shi & Walker with Husted's adjustable threshold, in order to avoid the saturation of the ADC.

**For claim** 14, Takatz teaches the method together with Shi, Walker in claim 13, although Shi teaches the narrow band threshold, thres_C at step 612, but fails to teaches the dynamically assigning a value to the threshold.

Husted et al. [Husted] teaches the dynamically assigning a value to the threshold [ the saturation threshold can be down loaded in paragraph 0041], in order to adjust the threshold values. Therefore, It would have been obvious to one of ordinary skill in the art at the time

the invention was made to upgrade Takatz, Shi & Walker with Husted's adjustable threshold, in order to avoid the saturation of the ADC.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takatz in view of Shi, Ciccarelli, as applied to claim 18 above, and further in view of Hughes (US 2003/0207,674 A1).

**For claim** 19, Takatz teaches the radio receiver [Fig. 1, Fig. 5A-5C], together with Shi & Ciccarelli in claim 18 above, but fail to teach the wherein the automatic gain control circuitry is further configured to receive at least one hysteresis value.

Hughes teaches the wherein the automatic gain control circuitry [ AGC 170 & associated circuitry in Fig. 1] is further configured to receive at least one hysteresis value [ the hyteresis can be adjusted to +/-6 dB in paragraph 0040], to compensate the threshold changes for the AGC. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to upgrade Takatz, Shi & Ciccarelli with Hughes' adjustable hysteresis, in order to compensate the threshold changes for the AGC.

**Conclusion**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. US 2003/0027,538 A1, Masumoto et al. teaches the gain controller 17for amplifiers 7 and A/D 14 [abstract, Fig. 1, paragraph 0015-0016, 0065].

B. US 6,836,647 B2, Rimini et al. teaches the agc 326, amplifier 322, A/D 324 having cdma signal power estimation [abstract, Fig. 3].

C. US 7,054,605 B1, Groe teaches the gain control of VGA 404 coupled to A/D [ abstract, Fig. 4 & its description in specification].

D. US 2003/0078,007 A1, Parssinen et al. teaches the power detector 50, 42 associated with the filter 36 for the gain control logic 44 of the amplifier 34, A/D 22 [Fig. 2 & its description in specification, abstract].

E. US 2001/0053,680 A1, Yamanaka et al. teaches the agc 100 for amplifier 103 & A/D 106, Fig. in cover page & its description in specification, abstract].

F. US 6,950,641 B2, Gu teaches the agc 98, amplifer 64, 78, 88, ADC 94 [Figure in cover page & its description in specification, abstract].

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow CC.

December 28, 2006.

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600